

Notice of Allowability

Application No.

09/925,888

Examiner

Ted T. Vo

Applicant(s)

WILKINSON ET AL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/13/04.
2. ☒ The allowed claim(s) is/are 1,2,5-7,9-12,15-17,19 and 20.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Ted T. Vo
TED T. VO
Primary Examiner

1. This communication is in response to the amendment filed on 12/13/04 responsive to the Office action dated: 06/16/04.

Claims 3-4, 8, 13-14, and 18 are canceled.

Applicants' arguments have been considered.

The amendment and the arguments to the amended limitations of independent Claims 1, 10, and 11 overcome the closest arts of record, Bacon et al., "Thin Locks: Featherweight Synchronization for Java", ACM 1998.

Reasons for Allowance

2. Claims 1-2, 5-7, 9-12, 15-17, and 19-20 are allowed.

- Prior art of record, Bacon, teaches threaded applications related to execution and configuration in network connection, including operating system layers, an application framework, and programming environment including a contention locking mechanism for setting light object locks and heavy object locks, which are handled at a system level, and wherein the contention locking mechanism is configured to set on the layouts of an object for maintaining a locking, unlocking and nested locks with/without contention. Each object layout forms a basic of data structure consisting of a header, a stack of threaded address such as thread A and thread B, and locking operations.

However, as pointed out by Applicants in the Remark filed on 12/13/04 to the amended limitation in independent Claim 1 and independent Claim 11 that Bacon does not disclose the thread A and thread B that are to be separated by at least a reserved area (Remarks: third paragraph, 'In fact...' of page 6). Furthermore, Applicants pointed out that independent Claim 10 is amended including newly added limitation *"to compare an address difference between a current lock slot of first thread for the lightly*

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locked object and that of the nested intra-thread locking attempt with a size of a reserved area."

(Remarks: the paragraph stated at line 3, 'Claim 10...', of page 7).

Therefore, the following is an examiner's statement of reasons for allowance: The cited prior arts taken alone or in combination fail to teach claimed invention to software applications for providing instructions to one or more processors to execute processes on an embedded computing device configured for establishing a network connection and a method for executing processes with contention-locking which comprise at least features,

*"(d) a stack-based local lock slot structure for addressing stack variables to identify threads; and
(e) a first stack corresponding to a data area of the first thread and a second stack corresponding to a data area of the second thread, the first stack and second stack being separated by at least a reserved area." as recited in independent Claim 1 and in such manners in independent Claim 11;*

and so as,

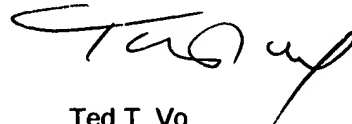
"(d) a contention locking scheme for setting light object locks, which are handled in user space, and heavy object locks, which are handled at the system level, the contention locking scheme is configured to set a light object lock on an initially unlocked object when a first thread attempts to lock the object, to maintain a light lock on the object when a nested intra-thread lock is attempted by the first thread, and to compare an address difference between a current lock slot of first thread for the lightly locked object and that of the nested intra-thread locking attempt with a size of a reserved area at an end of a stack" as recited in independent Claim 10.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (571) 272-3706. The examiner can normally be reached on 8:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3694. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Ted T. Vo', with a stylized flourish at the end.

Ted T. Vo
Primary Examiner
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March 18, 2005